APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.
09/069,088	04/29/98	LIANG	S	06502.0129-0

	EXAMINER
TM02/0313	NGUYEN, V

FINNGAN HENDERSON FARABOW
 GARRETT & DUNNER
1300 I STREET NW
WASHINGTON DC 20005-3315

ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 03/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

X Responsive to communication(s) filed on _Dec 27, 2000_

X This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*,1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire _____ 3 ___ month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

X Claim(s) _1-25_ _____ is/are pending in the applicat

☐ Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

X Claim(s) _1-25_ _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* X None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- *SEE OFFICE ACTION ON THE FOLLOWING PAGES* ---

DETAILED ACTION

1.   This Office Action is response to Amendment received on January 04, 2001.

2.   Claims 1-25 are presented for examination.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 USC § 102 that form the

basis for the rejections under this section made in this Office action:

> (e) the invention was described in a patent granted on an application for patent by another filed in the United
> States before the invention thereof by the applicant for patent, or on an international application by another who
> has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention
> thereof by the applicant for patent.

Claims 1-25 are rejected under 35 U.S.C. 102(e) as being anticipated by **Richardson**

(**U.S.PAT.NO. 5,974,536**; hereinafter **Richardson**).

As to claims 1, 9, 17, and 25, Richardson teaches (col.4, lines 30- col.6, line 67) time

profiling multiple threads of execution (profiling virtual memory access by one or more threads), a

program (program thread), interrupting (interrupts) execution of all of the threads (program

thread), determining (determines) whether register data (placement data) corresponding to a

selected thread (corresponding to respective threads) has changed (has been modified); and

providing an indication (track the relative frequency at which virtual memory addresses are

accessed by each thread; col.2, lines 65-67) of the change for the selected thread.

As to claims 2, 10, and 18, Richardson teaches (col.4, lines 30-67; col.5, lines 30-50)

accessing stored data corresponding to the selected thread (virtual memory addresses are

accessed by each thread); and comparing the stored data with register information stored

following a previous interrupt (analyzes virtual memory accesses by one or more threads).

As to claims 3, 11, and 19, Richardson teaches (col.6, lines 5-67) computing a value

corresponding to the stored data; and determining a relationship between the computed value and

the previously stored register information.

As to claims 4, 12, and 20, Richardson teaches (col.5, lines 35-67) updating a memory

segment (analyzes which regions of virtual memory are accessed by each program thread) to

reflect that the selected thread is running when it is determined that the computed value and the

previously stored register information do not match.

As to claims 5, 13, and 21, Richardson teaches (col.4, lines 30-67 and col.6, lines 1-67) a

selected thread (a thread), a multi-threaded program (program thread), suspending (interrupts)

execution of the multi-threaded program (program thread), retrieving register data (register)

corresponding to the selected thread, computing a value (determines a valid load) based on the

register data, comparing (the histogram generator walks...stored instruction is reached) the

computed value with register information stored following a previous suspension of the

multi-threaded program, and regarding (histogram data for each thread...upon particular

performance needs) the selected thread as running if the computed value is different from the

previously stored register information.

As to claims 6, 14, and 22, Richardson teaches (col.6, lines 45-67) updating (a

histogram is then incremented) the previous register information based on the computed value.

As to claims 7, 15, and 23, Richardson teaches (col.4, lines 35-67) providing an

indication (assembly code identified by the returned program counter) corresponding to a portion

of the program containing the selected thread.

As to claims 8, 16, and 24, Richardson teaches (col.4, lines 35-67 and col.6, lines 1-67)

time profiling multiple threads (profiling virtual memory access by one or more threads), a

program (program thread), suspending (interrupts) execution of the program; determining

(operating system sets a PC to reference) whether stored information corresponding to processor

registers for each thread (the thread) indicates that the thread is running (the thread being run),

and recording (recorded in a histogram) time-profiling information for each running thread.

Response to Arguments

4.   Applicants' arguments received on January 04, 2001 have been fully considered but they

are not persuasive.

Applicant argues "Richardson fails to teach determining whether register data corresponding to a selected thread has changed" (Amendment; page 2, lines 1-14). The Examiner disagrees. The rejection above now clarifies how Richardson meets the claimed limitations.

The broadly recited limitations of claims 1, 16, and 29 are anticipated by the cited reference.

Applicant argues "no comparing, and thus does not perform comparing the computed value with register information stored following a previous suspension of the multithreaded program" (Amendment; page 2, lines 15-page 3, line 2). Inherently, the comparison must be performed for obtaining a valid load or store instruction.

As to claims 5-8, 13-16, and 21-24, the arguments are not persuasive for reason as discussed above with regards to claim 5.

Applicant argues "...does not determine whether registers indicate that a thread is running" (Amendment; page 3, lines 3-8). The Examiner disagrees. Richardson also meets the claimed limitations.

As to claims 16 and 24 the arguments are not persuasive for reason as discussed above with regards to claim 8.

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

will the statutory period for reply expire later than SIX MONTHS from the mailing date of this

final action.

6.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Van Nguyen whose telephone number is (703) 306-5971. The Examiner can

normally be reached on Monday-Thursday from 7:30 AM - 5:00 PM. The Examiner can also be

reached on alternate Friday.

7.   Any inquiry of a general nature or relating to the status of this application should be

directed to the Group receptionist whose telephone is (703) 305-9600.

Art Unit: 2151

Any response to this action should be mailed to:

Commissioner of Patents and Trademark
Washington, DC 20231

or fax to:

(703) 308-9051 (for formal communications intended for entry)
(703) 305-9731 (for informal or draft communications)

VHN
March 11, 2001

MAJID BANANKHAH
/PRIMARY EXAMINER